

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (*Currently Amended*) A method Method for echo cancelling in a communication line system, the method comprising: characterised in that said method is performed by measuring the transmission return loss gain in said hybrid; and adapting tunable passive elements of a hybrid (5) which forms part of the analog front end of said communications line system, whereby the values of the tunable passive elements are controlled by digital control means (4) to reduce the transmission return loss gain.
2. (*Currently Amended*) The method Method according to claim 1, wherein characterised in that a scaling factor (k) is used for adapting said tunable passive elements.
3. (*Currently Amended*) The method Method according to claim 1, wherein characterised in that adapting said tunable passive elements comprises a step of measuring the TX return loss gain in said hybrid (5), whereby, when this when the transmission return loss gain differs from zero, the digital control means (4) goes through a loop of adaptation of the tunable passive elements until a this zero value of said transmission TX return loss gain is obtained.

32
cont

4. (*Currently Amended*) The method Method according to claim 3, wherein characterised in that a scaling factor (k) is used for adapting said tunable passive elements, and further characterised in that said hybrid (5) comprises a hybrid bridge (13) with two branches (19), each comprising two tunable passive impedances (Z_2 and Z_b) in series, one of which being a tunable balance impedance (Z_b), said tunable passive impedances being tuned such that the value of said tunable balance impedance (Z_b) approximates as close as possible the scaled impedance value of the parallel circuit of the line termination resistance ($2R_t/2n^2$) in transmission paths of the hybrid bridge the TX paths, and the line impedance (Z_{tr+li}).

5. (*Currently Amended*) The method Method according to claim 4, wherein characterised in that said hybrid (5) comprises a current to voltage converter (14), the feedback impedances (Z_{fb}) of which being adapted so as to be equal to said tunable balance impedance (Z_b).

6. (*Currently Amended*) A device Device for echo cancelling in a communication line system, comprising characterised in that it comprises:

[[-]] a hybrid (5), being part of the analog front end of said communication line system, said hybrid (5) comprising tunable passive elements; and , the values of which are controllable, by a

[[-]] digital control means (4) coupled to said hybrid, said digital control means controlling the values of said tunable passive elements to reduce a transmission return loss gain in said hybrid (5) and also included in said device.

7. (Currently Amended) The device Device according to claim 6, wherein characterised in that said tunable passive elements of said hybrid (5) are scalable by a predetermined scaling factor (k).

8. (Currently Amended) The device Device according to claim 6, wherein characterised in that said hybrid (5) comprises a hybrid bridge (13) and a current to voltage converter (14).

82
cont
9. (Currently Amended) The device Device according to claim 8, characterised in that said hybrid bridge comprising (13) comprises two identical branches (19), each comprising a tunable balance impedance (Z_b) in series with a second tunable impedance (Z_2).

10. (Currently Amended) The device Device according to claim 9, wherein characterised in that said tunable balance impedance (Z_b) comprises a first tunable resistor (R_0), in parallel with a series connection of a second tunable resistor (R_1) and a tunable capacitor (C_1), and in parallel with a fixed value ~~another~~ resistor (R_3).

11. (Currently Amended) The device Device according to claim 10, wherein characterised in that said fixed value ~~another~~ resistor (R_3) has the same resistance value ($2kR_1/2n^2$), as the line termination resistors (12) in the transmission paths of the hybrid bridge TX paths, scaled with a said scaling factor (k).

12. (*Currently Amended*) The device ~~Device~~ according to claim 9, wherein characterised in
~~that~~ said second tunable impedance (Z_2) in each branch (19) comprises a resistor (R_2) in series with
a tunable capacitor (C_2), the value ($2kR_2/2n^2$) of said resistor (R_2) being the same as the resistance
value of said line termination resistors (12) in the transmission paths of the hybrid bridge TX paths,
scaled with a said scaling factor (k).

13. (*Currently Amended*) The device ~~Device~~ according to claim 8 9, wherein characterised
~~in that~~ said current to voltage converter (14) comprises an operational amplifier (20) with tunable
feedback impedances (Z_{fb}) having the same impedance values as said tunable balance impedance
(Z_b).

14. (*Currently Amended*) The device ~~Device~~ according to claim 6, wherein characterised in
~~that~~ said digital control means comprises a microprocessor (4).

15. (*Currently Amended*) The device ~~Device~~ according to claim 9 6, wherein characterised
~~in that~~ said tunable passive elements are part of an integrated circuit.